



Impact of extreme temperature on hospital admission in Shanghai, China

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Abstract:

No previous study exists in China examining the impact of extreme temperature on morbidity outcomes. In this study, we investigated the impact of heat waves and cold spells on hospital admission in Shanghai, China. Daily hospital admission data between January 1, 2005 and December 31, 2008 were collected from the Shanghai Health Insurance Bureau. The heat wave was defined as a period of at least 7 consecutive days with daily maximum temperature above 35.0 degrees C and daily average temperatures above the 97th percentile during the study period. The cold spell was defined as a period of at least 7 consecutive days with daily maximum temperature and daily average temperatures below the 3rd percentile during the study period. We calculated excess cases of hospitalization and rate ratios (RRs) to estimate the impacts of both heat wave and cold spell on hospital admission. We identified one heat wave period (from 24 July to 2 August, 2007) and one cold spell period (from 28 January to 3 February, 2008) between 2005 and 2008. The heat wave was associated with 2% (95% CI: 1%-4%), 8% (95%CI: 5%-11%), and 6% (95%CI: 0%-11%) increase of total, cardiovascular and respiratory hospital admission. The cold spell was associated with 38% (95%CI: 35%, 40%), 33% (95%CI: 28%, 37%) and 32% (95%CI: 24%, 40%) increase of total, cardiovascular and respiratory hospital admission. The differences between heat wave and cold spell-related hospital admission were statistically significant for all causes and cardiovascular causes, but not for respiratory causes. In conclusion, both heat wave and cold spell were associated with increased risk of hospital admissions in Shanghai. Cold spell seemed to have a larger impact on hospital admission than heat wave. Public health programs should be tailored to prevent extreme temperature-related health problems in the city. (C) 2011 Elsevier B.V. All rights reserved.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change;
surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Health Professional, Policymaker



Climate Change and Human Health Literature Portal

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Cold, Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact:

specification of health effect or disease related to climate change exposure

Injury

Medical Community Engagement:

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content